

Appl. No. 10/699,343
Reply to Office Action of March 15, 2006

REMARKS/ARGUMENTS

An INFORMATION DISCLOSURE STATEMENT was filed May 28, 2006, including fee and Statement under 37 CFR 1.97(e). Consideration thereof is therefore respectfully requested.

Claims 1 and 14 (withdrawn) are amended to introduce claim 5 and claim 19, respectively. Entry of this amendment under 37 CFR 1.116 is respectfully requested in that it, at least, reduces issues by rewriting claim 5 as an independent claim presented as claim 1 (currently amended) and deletes the broader claimed subject matter originally in claim 1 (same for claims 14/19). Since claim 5 (and claim 19) were originally in the application, no new issues are raised with respect to the amended claims and therefore entry under 37 CFR 1.116 is appropriate.

Claims 1, 2, 5-8, 12 and 13 are rejected as anticipated by Maeda et al. (US 6,562,441) as evidenced by Shimadu et al. (US 2006/0046193). Claims 9-11 are rejected over Maeda as evidenced by Shimadu further in view of Misuda et al. and Anderson et al.

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The rejection relies on an interpretation of Maeda:

"Maeda discloses an ink jet recording medium comprising a base material and a porous ink receiving layer on the base material (abstract). The ink receiving layer comprises particles having a particle diameter of not larger than 1 μm (col. 6, line 24), hydrophilic binder crosslinked by irradiation of electron beam (col. 7, line 66 thru col. 8, line 64). The ratio of particles to binder is 1:1 to 100:1 (col. 4, line 35). The ink receiving layer further comprises additives such as cationic resins (col. 10, line 20). The cationic resins are equivalent to the claimed nitrogen containing compounds. PVA-420 is an example of the binder (Example 1), and the polymerization degree of the binder ranges between 300-2400, which is evidenced by Shimadu (see [0162] of Shimadu)."

To explain the substantial difference between the invention as claimed and Maeda, attention is first directed to the present specification at page 18, line 12 to page 19, line 5 where there is a discussion of the ink accepting porous layer which contains a hydrophilic binder including a polymer compound as below.

The network structure of the porous layer according to the invention can be easily hold many fine particles since such the layer contains the binder containing the polymer compound formed by crosslinking through the side chains by irradiating the ionizing radiation to the hydrophilic polymer compound having plural side chains on the main chain thereof and a polymerization degree of not less than 300 which has a long distance crosslinkage different from the relatively short distance crosslinkage of the three dimensional structure in the porous network formed by crosslinking by only use of (a) a crosslinking agent or that formed by crosslinking

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the irradiation of the ionizing radiation to (b) a hydrophilic polymer compound having no plural side chains or (that formed by crosslinking by the irradiation of the ionizing radiation to) (c) a polymer compound having a lower polymerization degree.

Consequently, a uniform porous layer can be formed by a smaller amount of the binder namely by a smaller ratio of the binder to the amount of the fine particles.

The hydrophilic binder pointed to by the Examiner is a hydrophilic binder containing a polymer compound crosslinked by using the polymer compound of type (b) in types (a)-(c) discussed above. PVA-420, the example of binder relied on by the Examiner, is a polymer compound of type (b). Because of this difference Maeda does not disclose a hydrophilic binder which is the binder required by the present invention, (Maeda discloses merely a hydrophilic binder, crosslinked by irradiation) since the hydrophilic polymer used in crosslinking differs from the hydrophilic polymer compound (in Claim 1, it is referred to as a "hydrophilic resin".)

The subject matter originally in claim 5 further emphasizes the difference by requiring "a polymer compound formed by crosslinking a hydrophilic resin having a dimmer formable photosensitive group formed via irradiation of ionizing radiation."

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It is clearly described in the specification that the network structure having a long distance crosslinkage of the porous layer according to the invention can be easily hold many fine particles, and differs from the relatively short distance crosslinkage of the three dimensional structure in the porous network formed by crosslinking by the irradiation of the ionizing radiation to a hydrophilic polymer compound having no plural side chains.

In view of the above, the invention of Claim 1 is not anticipated by Maeda et al. and it is difficult for one of ordinary skill in the art to reach the claimed invention because Maeda et al. does not disclose specific hydrophilic polymer compound used in crosslinking. Furthermore Maeda et al. does not disclose the unexpected results above mentioned.

In view of the above, it is submitted that the present invention is not shown or suggested by the cited art. Withdrawal of the rejections and allowance of the application are respectfully requested.

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Respectfully submitted,

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